

## ON THREE NEW AFRICAN MIDGES

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## PLATE III

The three minute Diptera described below are members of the family *Chironomidae*, or Midges, and further, are all referable to that section, the sub-family *Ceratopogoninae*, which contains the great majority of the biting or blood-sucking midges at present known. Whether the species considered in this paper are possessed of phlebotomic habits cannot yet be definitely stated. Two of them, however, belong to a genus (*Culicoides*) notorious for its inclusion of some most annoying pests, while the formation of the mouth parts in the species of *Forcipomyia* shows it to be entirely capable of indulging in such tastes. The types and co-types of the species herein described have been deposited in the Museum of the Liverpool School of Tropical Medicine.

Genus *Forcipomyia*, Meig.

*Forcipomyia lejanui*, sp. n.

(Plate III, figs. 1, 2 and 3)

A minute blackish brown fly, with yellowish brown legs and grey unspotted wings, which are slightly longer than the abdomen.

*Head* dark brown, the vertex bearing sparsely arranged, short golden brown hairs. *Eyes* bare, narrowly separated in the middle line. *Proboscis* as long, or nearly as long, as the head; labium brownish black with relatively large labellae, and furnished with several long dark hairs. *Clypeus* dark chestnut brown, bearing a few dark, forwardly projecting hairs. *Palpi* (fig. 1) dark brown, with rather coarse hairs; third joint much swollen, the orifice of the sense organ situated at the apex of a conspicuous tubercle; apical segment with four or five relatively long hairs. *Antennae*, except the large second segment, paler in colour than the palpi, with

yellowish brown hairs; segments 3-10 very short, globose (3.7 slightly broader than long), their lengths combined considerably less than the total length of the five elongate terminal joints; last segment with a small but distinct terminal stylet.

*Thorax* shining black or blackish brown, markedly convex dorsally, and with a relatively large depressed posterior area sloping abruptly to the scutellum; sparsely clothed with short golden brown hairs, intermixed with longer black ones laterally and posteriorly. *Pleurae* dark brown. *Scutellum* coloured similarly to the thorax, with four pairs of very long, golden brown bristles and several short hairs arising from the posterior margin.

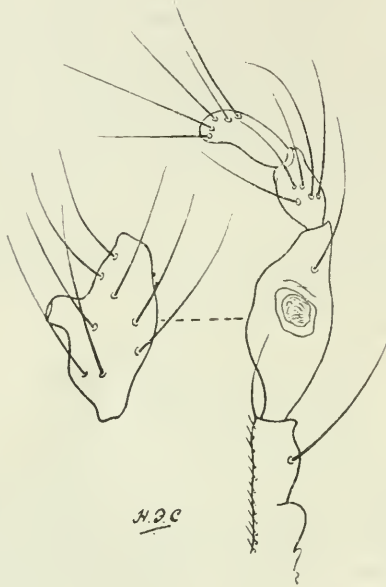


FIG. 1. Palpus of *Forcipomyia lejanui*, n.sp. ♀. ( $\times 400$  circa.)

*Abdomen* dull blackish brown dorsally, with numerous dark hairs which become somewhat longer laterally and apically. *Venter* slightly paler in colour, with pale brown hairs.

*Wings* (Pl. III, fig. 5) densely clothed with relatively long decumbent hairs. Venation as shown in fig. 5; space between separated portions of first and third longitudinal veins extremely narrow and difficult to distinguish; petiole and bases of upper and

lower rami of fourth longitudinal vein indistinct. *Halteres* of a creamy white colour.

*Legs* yellowish brown, rather densely haired. Femora unarmed. Fore tibiae each with a short, stout apical ventral spine; hind tibiae each with several long hairs on the dorsal surface, a ventral spur or spine, and a double transverse row of short bristles at the apex; the outermost row is apparently composed of six relatively stout hairs, and the innermost of from twelve to fourteen shorter and more delicate ones. First tarsal segment of hind legs (Pl. III, fig. 2) about twice the length of the succeeding joint. Empodium hairy and conspicuous, almost as long as the claws.

*Length* 1.50 mm.; length of wing 0.8 mm.

*Habitat*: Salaga, Gold Coast. Dr. G. E. H. Lefanu, 11.6.1911; six females.

The exact generic position of this interesting little fly is at present somewhat uncertain. In accordance with the recent definitions of the Ceratopogonine genera given by Malloch, it would seem to belong either to his new genus *Pseudoculicoides* or to *Forcipomyia*, Meig. *Ceratopogon*, Meig., in its narrow sense may be eliminated, owing to the presence, in this species, of distinct decumbent hairs on the greater part of the wing field. The species of *Pseudoculicoides* differ from those of *Forcipomyia*, *inter alia*, in possessing rather sparsely-arranged hairs on the wings, indistinct empodia, and longer basal joints to the hind tarsi. In spite of the latter character, however, the species under consideration apparently possesses closer affinities to the members of Meigen's genus, and has, therefore, been placed accordingly.

#### Genus *Culicoides*, Latr.

A considerable number of minute flies belonging to this genus were collected by Professor J. W. W. Stephens in the region of the Gizeh Pyramids during December, 1909. On examining the material, three distinct and easily separable species were discovered, of which two are new, and are described below. The third species, forming by far the greater part of the collection, was the common European *C. varius*, Winn., which, it would seem, has not previously been recorded from Africa.

*Culicoides cordiformitarsis*, sp. n.

(Plate III, figs. 3 and 4)

A small dark brown species with yellowish brown legs and whitish wings, on each of which is a single conspicuous dark brown spot situated near the middle of the anterior margin. *Fourth tarsal segment of all the legs heart shaped.*

*Head*: Vertex dark brown, clothed with short golden brown hairs, front dark ashy grey. *Eyes* bare, not contiguous. *Proboscis* as long as the head; labium dark brown, with short yellowish hairs. *Clypeus* dark brown, with several relatively long brown hairs projecting over the base of the proboscis. *Palpi* dark, clothed with rather long yellowish or golden hairs; third segment slightly incrassate. *Antennae* yellowish brown, with whorls of comparatively short golden hairs; second segment (first of some authors) dark brown, becoming greyish pollinose apically, bearing a few short pale hairs; segments 3-10 sub-cylindrical, rather longer than wide.

*Thorax* dark brown, humeral region and a ring round each anterior depression markedly light grey pollinose; sparsely clothed with short golden hairs. *Scutellum* dark brown, with apparently four long border bristles and several shorter paler hairs. *Pleurae* dark brown.

*Abdomen* dull dark brown, clothed with numerous, somewhat scattered golden brown hairs, which are longer laterally and apically; at the extreme apex several long dark brown hairs are intermixed with the paler ones.

*Wings* (Pl. III, fig. 4) with venation and ornamentation as shown in the figure. The very pale coloration of the wing field renders the dark brown spot on the second cell (formed by the first and third longitudinal veins at the anterior margin) very conspicuous. Petiole and bases of upper and lower branches of the fourth longitudinal vein indiscernible. Wings clothed with short pale hairs on the apical two-thirds. *Halteres* with white knobs and yellowish stems.

*Legs* yellowish brown, the coxae and trochanters darker. Hind tibiae with four or five very long brownish hairs on the outer side, a short, strong, black, apical spur ventrally situated, and a

transverse row of six long and two short bristles immediately below the apex. Tarsi all densely hairy, the hairs golden brown and black intermixed, the paler ones predominating; basal joint of hind tarsus more than twice the length of the second segment; fourth tarsal segment (Pl. III, fig. 3) in all the legs very characteristic, being small and cordiform. Empodium minute, about one-sixth the length of the claws.

*Length* 2.00 mm.; length of wing 2.00 mm.

*Habitat*: Gizeh Pyramids, near Cairo, Egypt. Prof. J. W. W. Stephens, December, 1909; one female.

*Culicoides stephensi*, sp. n.

(Plate III, fig. 6)

A dark grey midge, with brown legs and conspicuously brown-spotted wings.

*Head* dark brown, with scattered golden brown hairs on the vertex—laterally, on the same region, are some longer, darker ones, projecting over the eyes. *Eyes* bare, narrowly separated above. *Proboscis* as long as the head, labium dark brown, with scattered golden hairs. *Clypeus* dark chestnut brown, bearing a few moderately long brown hairs. *Palpi* reddish brown, slender, bearing rather pale brown hairs, which are more numerous at the apex. *Antennae*, except the large second segment, yellowish brown, with whorls of pale brown hairs, second segment dark reddish brown, becoming somewhat greyish pollinose towards the apex; segments 3-10 more elongate than usual; segments 5-10, inclusive, being from two to two and a half times as long as broad; five terminal segments elongate cylindrical, the apical joint longer and wider than any of the preceding, their combined lengths approximately equal to the lengths of segments 5-10 taken together.

*Thorax*. Anterior two-thirds ashy grey, paler grey posteriorly, with three narrow, black longitudinal stripes extending to the scutellum; humeral region, and a narrow line reaching to a spot immediately in front of the anterior depression, light grey pollinose; on each side of this line is a small diffuse blackish grey area; anterior depressions relatively large, shining black. In one

specimen, three distinct oval dark brown spots are visible on the disc; one of these is situated towards the anterior extremity of the median stripe, the others each near the middle of one of the lateral stripes. Dorsum clothed with sparsely arranged pale golden hairs, intermixed with short black ones; immediately before the scutellum are two stout black bristles and a few moderately conspicuous black hairs. *Scutellum* brownish grey, with four border bristles. *Pleurae* dark brown. *Post-scutellum* dark brown, with light grey median and lateral areas anteriorly.

*Abdomen* dark brown, with short scattered golden brown hairs, which increase in length towards the apical extremity, hind margins of segments narrowly grey. *Venter* similar to dorsum.

*Wings* (Pl. III, fig. 6) light grey with numerous irregular brown spots, and sparsely clothed with short pale hairs. Veins yellowish brown, venation and ornamentation as in fig. 6. *Halteres* creamy white.

*Legs* brown, with yellowish knee spots, clothed somewhat thickly with pale brown hairs. Fore tibiae each with a short apical ventral spine; hind tibiae each with a short, stout black ventral spur, and a double transverse row of bristles at the apical extremity, the more distal row is composed of six relatively large and stout bristles, the other of some eighteen shorter and more delicate ones. Basal joints of hind tarsi not quite twice the length of the second segments. Empodium indistinguishable.

*Length* 1.75 mm.; length of wing 1.70 mm.

*Habitat*: Gizeh Pyramids, Egypt. Prof. J. W. W. Stephens (to whom I have much pleasure in dedicating this species), December, 1909; three females.

This species evidently bears a marked superficial resemblance to *Ceratopogon* (? *Culicoides*) *puncticollis*, Becker, which occurs at Alexandria. It approaches Becker's species more especially in regard to the ornamentation of the wings, but may be easily separated therefrom by the venation and the apparently complete absence of an empodium. In *C. stephensi* the first and third longitudinal veins separate distally, forming by means of the small cross vein two distinct loops, whereas in *C. puncticollis* these veins are fused throughout their entire length.

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## EXPLANATION OF PLATE

- Fig. 1. *Forcipomyia lejanui*, sp. n. female ( $\times 40$  circa). Natural size indicated by cross lines.
- Fig. 2. Hind tarsus of *Forcipomyia lejanui*, sp. n., female ( $\times 110$  circa).
- Fig. 3. Hind tarsus of *Culicoides cordiformitarsis*, sp. n., female ( $\times 110$  circa).
- Fig. 4. Wing of *Culicoides cordiformitarsis*, sp. n., female ( $\times 48$  circa).
- Fig. 5. Wing of *Forcipomyia lejanui*, sp. n., female ( $\times 90$  circa).
- Fig. 6. Wing of *Culicoides stephensi*, sp. n., female ( $\times 48$  circa).